

A Survey and Analysis of the Chinese Character Usage in the Reading Materials of Developing Chinese (2nd Edition)

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ABSTRACT

This study investigates and analyzes the character category, character volume, and character frequency of the four volumes of the international Chinese education textbook *Developing Chinese (2nd Edition)* in the intermediate and advanced levels. And the study also finds that the textbooks focus on difficulty enhancement in volume and category. In terms of character selection, they choose to teach characters with fewer strokes and simpler forms first. However, the amount of characters used between adjacent levels is not satisfactory; some characters have a low recall rate, and the selection of characters is not completely in accordance with the *Kanji Level Syllabus*. On this basis, this paper advocates that the selection of characters for international Chinese education materials should be based on high-frequency characters, commonly-used characters and characters with simple strokes, while focusing on improving the recurrence rate of Chinese characters.

Keywords: *Character volume, Character category, Character order, Coverage, Kanji Level Syllabus.*

1. INTRODUCTION

Not many academic studies have been conducted on the use of characters in international Chinese language education textbooks. Wang Yanjun (2009) analyzed the use of characters in five typical textbooks since the 1950s and pointed out that the existing intensive reading textbooks had too many word types, too many superlatives, too low reproduction rates, and unreasonable Chinese character arrangements. Su Xinchun (2006) conducted a detailed survey of the 12 sets of classical international Chinese education textbooks in terms of characters, words and word meanings, including the number of character types, shared characters and unique characters, as well as the use of characters in separate books and coverage rates, revealing the overall picture of the use of characters in the 12 sets of classical international Chinese education textbooks. At the same time, Su (2011) continued to investigate and analyse the shared and unique use of characters in four international

Chinese education textbooks, and came to the conclusion that high-frequency characters are concentrated while low-frequency characters are dispersed, and compared the use of characters in the textbooks with the List of Commonly Used Modern Chinese Characters.

The study also compares the use of characters in international Chinese language education materials with that in the List of Commonly Used Modern Chinese Characters. The investigation of the use of characters in international Chinese language education materials is important for understanding the amount, type and sequence of characters used in teaching materials, and is also a reference value for future teaching materials. This study is based on the Chinese Character Level Syllabus (2905 characters) in the Chinese Vocabulary and Chinese Character Level Syllabus (1992), the 3000-character Graded Chinese Character List for International Chinese Education in the Syllabic Chinese Vocabulary Level Classification for International Chinese Education (2010) and the 3000-character Chinese

Character List in the Chinese Language Proficiency Standard for International Chinese Education (2021), respectively. A survey was conducted to analyse the word types, word volume and word frequency of a total of four volumes of reading materials in the international Chinese education textbook "Developing Chinese (2nd Edition)" at the intermediate and advanced levels, and to analyse their word selection and use.

2. THE PROCESS OF THE STUDY

After collecting data, a thorough analysis of the corpus is in need. The research on the word usage, word type and the comparison in different volumes are conducted.

2.1 Description of the Corpus

There are four advanced reading textbooks in Developmental Chinese (2nd Edition): including Intermediate Reading (I, II) and Advanced Reading (I, II). (There are four advanced reading materials

in Developing Chinese (2nd Edition): Intermediate Reading (I, II) and Advanced Reading (I, II). For the sake of convenience, this article is called "Intermediate Reading I", "Intermediate Reading II", "Advanced Reading I" and "Advanced Reading II" respectively.) In this article, the text part of "Developing Chinese" is involved, except for additional information such as the preface and writing instructions. The total number of words used in the four volumes of the reading materials of Chinese as a Foreign Language amounted to 258,153, with a total of 3,028 word varieties.

2.2 Survey on the Word Usage of the Four Volumes of Reading Materials

The amount of words used in international Chinese language education materials is a direct reflection of their reading volume, and also a direct reflection of the difficulty of reading the texts. The amount of words used in the four volumes of the Developing Chinese as a Second Language is as follows.

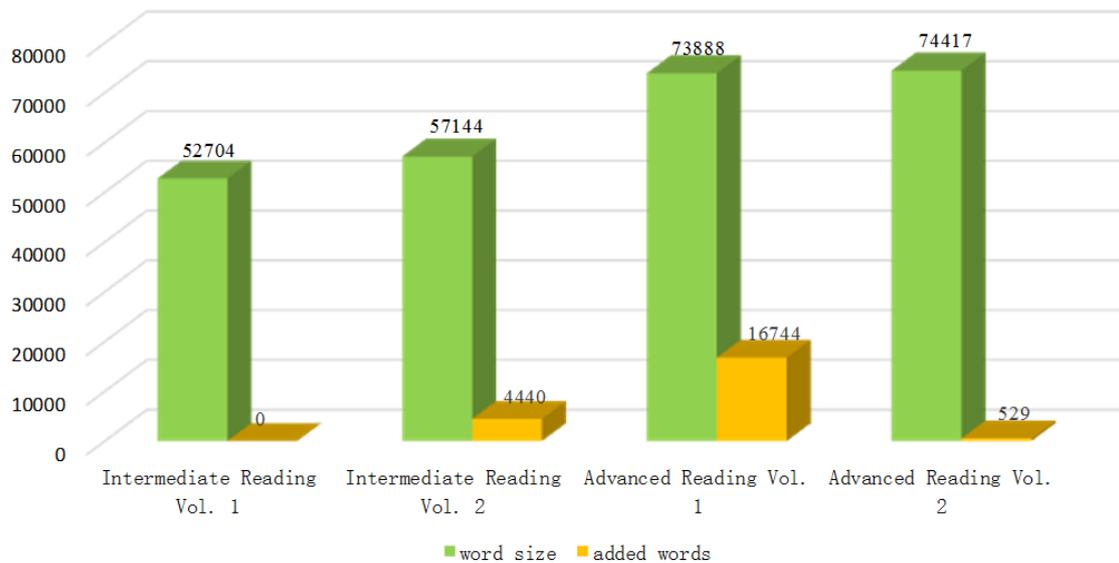


Figure 1 The amount of words used in the four volumes of Developing Chinese for Intermediate and Advanced Reading.

As can be seen from "Figure 1", there is little difference in the amount of words used between the two volumes of Intermediate Reading, with a slight increase of 4,440 words from 52,704 to 57,144, and very little difference in the amount of words used between the two volumes of Advanced Reading, with an increase of only 529 words between 73,888 and 74,417. This indicates that the amount of words used in Developing Chinese is relatively similar between the two intermediate reading books and

between the two advanced reading books, while the amount of words used increases more in the transition from intermediate to advanced reading, which clearly reflects the increase in difficulty between the intermediate and advanced reading materials, which is reasonable.

However, the word count for Advanced Reading I from "Figure 1" has increased dramatically compared to Intermediate Reading II,

by 16,744 words. It should be noted that this sharp increase does not facilitate the transition from intermediate to advanced reading materials, i.e. the word count between the two volumes at the same level is not ideal.

2.3 Survey on the Number of Word Types Used in Four Volumes of Reading Materials

A survey of the number of word types in international Chinese language education materials

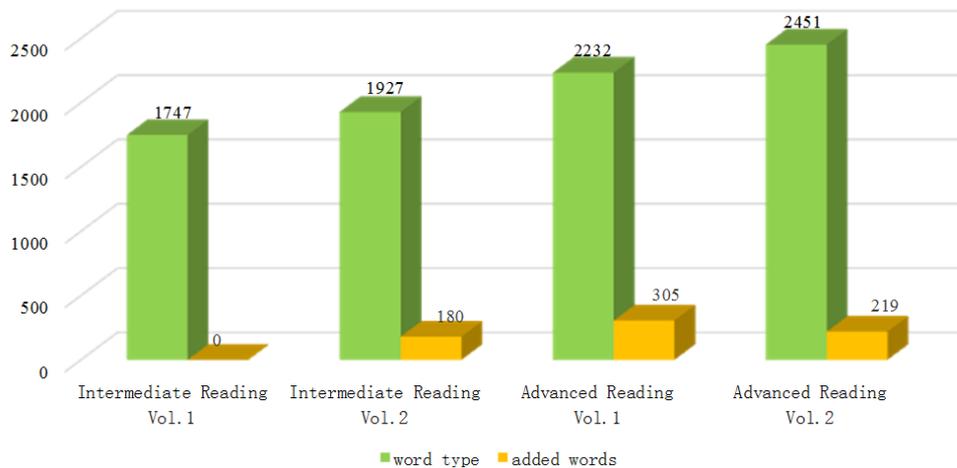


Figure 2 Number of word types used in the four volumes of Developmental Chinese for Intermediate and Advanced Reading.

As can be seen from "Figure 2", the number of words used in Intermediate Reading I to Advanced Reading II has increased gradually from 1,747 words in Intermediate Reading I to 2,451 words in Advanced Reading II, an average increase of 704 words per book. This represents a total increase of 704 word types, or an average increase of about 234 word types per book. The number of word types used in the four reading books increases gradually, and that the number of word types used between adjacent levels of the textbook is relatively good in terms of articulation.

2.3.2 Number of Word Types and Coverage of the Four Reading Materials

The coverage rate is the percentage of designated respondents within the surveyed corpus to the total number of all respondents¹ and can

provides a visual representation of the specifics of the selection of words used in the materials and determines what and how many words are taught in a material.

2.3.1 Number of Word Types Used in the Four Volumes of Reading Materials

The use of word types in the four volumes of Developmental Chinese for Intermediate and Advanced Reading is as follows.

reflect the ability of the word species to cover the text. Statistics on the coverage rate of Chinese characters and the number of character species in the four volumes of the DCCR are shown in the following "Table 1".

1. See "Language Monitoring Related Terms" in China Language Life Status Report 2013, edited by the National Centre for Language Resources Monitoring and Research, Beijing: The Commercial Press, 2013.

Table 1. Statistics on the coverage of Chinese characters and the number of character types in the four volumes of Developing Chinese for Intermediate and Advanced Reading

coverage (%)	Intermediate Reading Vol.1		Intermediate Reading Vol.2		Advanced Reading Vol.1		Advanced Reading Vol.2	
	word type	coverage of word type(%)	word type	coverage of word type(%)	word type	coverage of word type(%)	word type	coverage of word type(%)
10	4	0.23	5	0.26	4	0.18	5	0.20
20	15	0.86	17	0.88	19	0.85	23	0.94
30	35	2.00	38	1.97	43	1.93	52	2.12
40	65	3.72	70	3.63	80	3.58	95	3.88
50	106	6.07	116	6.02	131	5.87	155	6.32
60	165	9.44	183	9.50	202	9.05	236	9.63
70	251	14.37	279	14.48	304	13.62	350	14.28
80	382	21.87	425	22.06	458	20.52	525	21.42
90	619	35.43	688	35.70	745	33.38	844	34.43
91	655	37.49	728	37.78	789	35.35	893	36.43
92	697	39.90	772	40.06	841	37.68	948	38.68
93	745	42.64	822	42.66	900	40.32	1012	41.29
94	800	45.79	878	45.56	970	43.46	1087	44.35
95	862	49.34	946	49.09	1050	47.04	1175	47.94
96	939	53.75	1024	53.14	1146	51.34	1284	52.39
97	1035	59.24	1126	58.43	1266	56.72	1421	57.98
98	1160	66.40	1264	65.59	1431	64.11	1605	65.48
99	1352	77.39	1481	76.86	1685	75.49	1890	77.11

As can be seen from "Table 1", the proportion of word types used for the same coverage rate in each book is relatively stable and does not vary greatly, and the high frequency words are more concentrated: when the coverage rate is 10%, the proportion of word types used in the four books are 0.23%, 0.26%, 0.18% and 0.20% respectively, with an average of 4.5 word types; when the coverage rate is 60%, the proportion of word types used in the four books are 9.44%, 9.50%, 9.05% and 9.63% respectively, with an average of 197 word types. When the coverage rate was 80%, the proportion of word types used in the four volumes was 21.87%, 22.06%, 20.52%, 21.42%, with an average of 448 word types used; when the coverage rate was 90%, the proportion of word types used in the four volumes was 35.43%, 35.70%, 33.38%, 34.43%, with an average of 724 word types used. When the coverage rate was 99%, the proportion of word types used in the four volumes was 77.39%, 76.86%, 75.49% and 77.11%, with an average of 1602 word types used. From this, the following conclusions can be drawn.

- Conclusion 1: There are some low-frequency words in the word types used in the Developmental Chinese intermediate and advanced reading materials

According to the above data, the high-frequency words used in each reading textbook are relatively concentrated, with a small number of high-frequency words covering most of the textbook corpus: when the coverage rate is 80%, the average number of word types are 448 words, accounting for about 20% of all; when the coverage rate is 90%, the average number of word types are 724 words, accounting for about 34% of all; when the coverage rate is 99%, the average number of words are 1602, which is about 75% of all.

Of the word types used in the four volumes, around 75% cover 99% of the corpus, which means that 1% of the corpus needs to be supplemented by 25% of the word types, indicating that there are around 25% of low frequency words in all four volumes.

- Conclusion 2: Insufficient recurrence of Chinese characters within the single volume of Developmental Chinese for Intermediate and Advanced Reading

The paper goes on to count the number of word types in each frequency band of the four volumes of Developing Chinese, as shown in the following "Table 2".

Table 2. Statistics on the number of word types in each frequency band of the four volumes of the Developmental Chinese intermediate and advanced reading materials

coverage(%)	Intermediate Reading Vol.1		Intermediate Reading Vol.2		Advanced Reading Vol.1		Advanced Reading Vol.2	
	word type	coverage of word type(%)	word type	coverage of word type(%)	word type	coverage of word type(%)	word type	coverage of word type(%)
1-2	457	26.16%	524	27.19%	608	27.24%	671	27.38%
3-5	302	17.29%	319	16.55%	370	16.58%	439	17.91%
6-10	249	14.25%	247	12.82%	311	13.93%	319	13.02%
>10	739	42.30%	837	43.44%	943	42.25%	1022	41.70%

As can be seen from "Table 2", the frequency of word types set in each volume is fairly stable. The proportion of word types used more frequently than 10 ranges from 41% to 43%, i.e. about 42% of the word types in each volume occur more frequently and have a higher recurrence rate. The proportion of word types used between 3 and 5 ranged from 16% to 17%, meaning that around 16% of the word types in each volume were recurring to some extent. The proportion of word types used between 1 and 2 ranged from 26% to 27%, i.e. about 27% of the word types in each volume were less frequent and had a lower recurrence rate.

For learners of Chinese as a second language, Chinese characters are relatively difficult to learn and remember, so the recurrence rate of characters used in textbooks is rather important. The more frequent characters show within a single textbook, the better students gain a deep understanding of these characters. In addition to minimising the number of low-frequency characters, international Chinese education materials should also increase the recurrence rate of difficult and new characters.

2.4 Comparison Between the Word Use of Four Volumes of Reading Textbooks and the Related Standard Word List

With regard to the basis for the selection of characters in international Chinese education textbooks, the state has a series of relevant standards: in 1992, the examination Center of the Office of the National Chinese proficiency examination Commission formulated the Grade outline of Chinese Vocabulary and Chinese

characters, which is an important norm for teaching design, textbook compilation, classroom teaching and achievement testing for foreign students.

In 2010, the Ministry of Education issued the Lexical Classification of syllable Chinese characters for Chinese International Education, which began to be implemented on February 1, 2011. This is an important basis for the overall design, textbook compilation, classroom teaching and course testing of international Chinese teaching around the world and China's domestic international Chinese education and teaching.

In 2021, the Ministry of Education and the National language work Committee issued the International Chinese proficiency Standard for Chinese Education, which has been implemented since July 1, 2021. It provides a reference for the overall design, textbook compilation, classroom teaching and curriculum testing of international Chinese education around the world.

The intermediate and advanced reading textbook of "Developing Chinese" was published in 2011. In the process of compilation, the syllabus of Chinese Vocabulary and Chinese characters (1992) was referenced. Therefore, this paper compares its word use with the "Chinese character Rank outline" (2905 words) in the syllabus of Chinese Vocabulary and Chinese characters (1992), and analyzes whether the middle and advanced reading textbook of "Developing Chinese" meets the character selection standards of that time.

This paper compares the specific situation of the characters used in the four-volume reading

textbook of "Developing Chinese" with the "outline of Chinese characters" (2905 words) in the outline of Chinese Vocabulary and Chinese characters

(1992). The details of whether the word selection implements the outline standard are as follows: ("Table 3")

Table 3. Comparison of the use of characters in the four volumes of Developing Chinese with the syllabus of Chinese characters (2905 characters)

volume	word type	Level A coverage of words	Level B coverage of words	Level C coverage of words	Level D coverage of words	Outline coverage of words	Outline coverage of outline
Intermediate							
Reading	1747	761 43.56%	566 32.39%	217 12.42%	139 7.95%	72	4.12%
Vol.1							
Intermediate							
Reading	1927	768 39.85%	617 32.01%	255 13.23%	179 9.28%	116	6.01%
Vol.2							
Advanced							
Reading	2232	782 35.03%	668 29.92%	334 14.96%	269 12.05%	197	8.82%
Vol.1							
Advanced							
Reading	2451	779 24.58%	723 29.49%	381 15.54%	333 13.58%	243	9.91%
Vol.2							

As can be seen from "Table 3", each volume of reading textbooks has not fully implemented the list of Grade A and Grade B characters: 1604 words in the Chinese character Grade outline (2905 words) should be the primary standard for character selection in international Chinese education textbooks at that time. However, these characters are not fully included in the four volumes, and there are some missing characters and some super-programmatic characters at the same time. This shows that "Developing Chinese" does not strictly follow the "outline of the level of Chinese characters" (2905 words) in the outline of Chinese Vocabulary and Chinese characters (1992).

The intermediate and advanced reading textbooks of Developing Chinese were published in 1992, which has been nearly 20 years since the release of the syllabus of Chinese Vocabulary and Chinese characters (2011).

As mentioned earlier, after the outline of Chinese Vocabulary and Chinese characters (1992), there are the syllabic Chinese Lexical Classification for Chinese International Education (2010) ²

2. The "Grading of Syllabic Chinese Characters for Chinese Language Education" was released on 19 October 2010 and implemented on 1 February 2011. The "Graded Chinese Character List for Chinese Language Education" includes Level 1 (elementary) Chinese characters (900 characters), Level 2 (intermediate) Chinese characters (900 characters), and Level 3 (advanced) Chinese characters (900 characters), along with the Chinese Language Education Level 3 (advanced) Appendix Chinese characters.

implemented on February 1, 2011 and the Chinese language level Standard for International Chinese Education (2021) ³ implemented on July 1, 2021.

Comparing the latter two new standards, it can be found that the 3000 characters in the Chinese character Table of the Chinese language level Standard for International Chinese Education (2021) is completely the same as that of the Chinese character Table for Chinese International Education (2010). The two are only different in the classification of Chinese characters, and the classification of Chinese characters in version 2021 is more detailed. ⁴

At the same time, the level outline of Chinese characters (2905 words) in the outline of Chinese Vocabulary and Chinese characters (1992) is also included in these 3000 words.

3. The Chinese Language Proficiency Standard for International Chinese Language Education was released on 24 March 2021 and implemented on 1 July 2021. The Chinese Character List includes a Level 1 Chinese Character List (300 characters), a Level 2 Chinese Character List (300 characters), a Level 3 Chinese Character List (300 characters), a Level 4 Chinese Character List (300 characters), a Level 5 Chinese Character List (300 characters), a Level 6 Chinese Character List (300 characters), and a Level 7 to Grade 7 to 9 kanji lists (1200 characters).

4. Both character lists are roughly comparable to the Level 1 character list (3,500 commonly used characters) in the General Standard Chinese Character List (2013), and reference is made to the Level 1 character list in the selection of characters to be used.

It shows that the types of words used in the three word lists are very similar, and there are only differences in the classification, from the A, B, C, D four-level characters to the first-level, second-level, third-level characters, and then to the first-to ninth-level characters, and the classification is from coarse to fine.

Therefore, the comparison between Table 3 and the three word lists shows that "Developing Chinese" (2011) does not strictly choose words according to the new word list.

In addition, we found that even in the latest word list (version 2010 and version 2021), the classification of some words is not in line with the current actual frequency of use, and the frequency of use in the current actual language life is relatively low, which is not a commonly used list. These specific words should be replaced and updated.⁵

In other words, even if "Developing Chinese" (2011) keeps pace with the times, while referring to the outline of Chinese Vocabulary and Chinese characters (1992) that has been issued and implemented at that time, it is still open to question whether its character selection is in line with the actual use of Chinese characters at that time and at present, with reference to the new character table "Lexical Classification of syllable Chinese characters for Chinese International Education" (2010) implemented in February 2011, it is still open to question.

At the same time, we also discussed the proportion of characters used in the four reading textbooks according to the "Chinese Character Grades Syllabus" and found that from "Intermediate Reading I" to "Advanced Reading II", the proportion of Grade A characters and Grade B characters gradually decreases, while the proportion of Grade C characters, Grade D characters and super-outline characters gradually increases, which shows that the increasing difficulty of using words

has been taken into account in the reading materials of "Developing Chinese".

3. CONCLUSION

This paper makes a statistical analysis on the number of words, the type of characters and the coverage rate of Chinese characters in the middle and advanced reading textbook of Developing Chinese language (second Edition). And its character use is mainly compared with the Chinese character Grade outline (2905 words) in the Chinese level Vocabulary and Chinese character Grade outline (1992).

The purpose of this paper is to put forward some valuable data and suggestions in view of the problems that need to be improved in the word selection of the current international Chinese education textbooks, as follows:

3.1 *The Character Selection of International Chinese Education Textbooks Should be Based on High-frequency and Commonly Used Characters*

Through the investigation and statistics on the number of words and coverage in the middle and advanced reading textbooks of "Developing Chinese", it is found that high-frequency words are quite concentrated, and the proportion of words used in each volume is about the same when the coverage rate is 80%. The proportion of words used in the four volumes was 21.87%, 22.06%, 20.52% and 21.42%, with an average of 448 words.

When the coverage rate is 90%, the proportion of words used in the four volumes is 35.43%, 35.70%, 33.38% and 34.43%, with an average of 724 words, while the number of words used in each textbook is about 1700 to 2400, and there are still about 25% of low-frequency words.

Therefore, in the word selection of international Chinese education textbooks, the word list standards should be implemented, high-frequency and commonly used words prioritized, and the proportion of uncommonly used words reduced, that is, low-frequency words, in teaching materials, especially in junior and intermediate textbooks.

5. According to the authors' research, the specific character types in the Chinese character list (3000 characters) of the International Chinese Language Education Standards for Chinese Language Proficiency Levels 1 to 9 should be updated. Comparing them with the top 3,000 characters used in the media master list for more than 10 years in the Report on the State of Chinese Language Life (Green Book), we found that 232 characters in the I-VI Chinese Language Proficiency Standard do not correspond to their current frequency of use; 301 characters in the I-IX character list are used less frequently in current language life and are not considered to be commonly used. The list of these characters should be updated.

3.2 Attention Should Be Paid to Improving the Recurrence Rate of Chinese Characters in the Character Selection of International Chinese Education Textbooks

The recurrence rate of Chinese characters is very important for learners of Chinese as a second language, and it is the embodiment of the principle of firmness in teaching.

Through the statistics of the number of words in each frequency segment of the four volumes of Developing Chinese, the setting of the frequency of characters in each textbook is quite stable, and great attention is paid to the frequency of Chinese characters in the use of characters. However, about 27% of the Chinese characters in each textbook have a low recurrence rate.

For learners of Chinese as a second language, Chinese characters are relatively difficult to learn and remember, so the recurrence rate of characters used in textbooks is very important.

Some difficult words and new words appear repeatedly in single-volume textbooks and between textbooks, which will help students to deepen their impression and understand and master the connotation of these words more deeply.

Therefore, the international Chinese education textbooks should minimize the number of low-frequency characters and improve the recurrence rate of difficult and new characters, so that students can learn and master Chinese characters better and more easily.

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6. 2022 "National Innovation and Entrepreneurship Training Program for University Students in Hubei Province" Hubei Provincial Project "Research on Chinese Character Usage in the Era of Big Data and Cloud Computing" (S202210490068).

7. 2021 "National Innovation and Entrepreneurship Training Program for University Students in Hubei Province" provincial-level project in Hubei Province, China "Based on the 'Internet+' system, integrating Xinjiang regional specialties to establish an APP sales platform for Xinjiang regional specialties" (S202110490065).

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